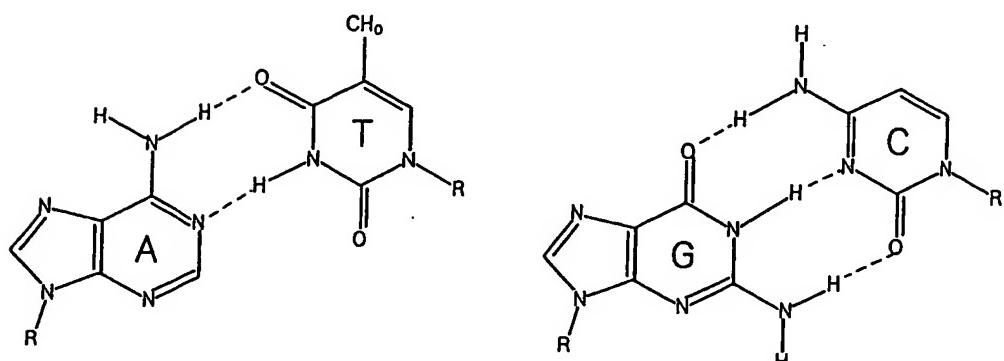
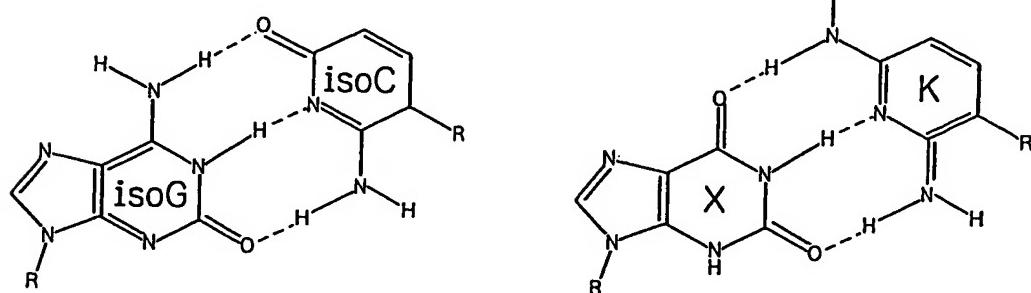


Figure 1

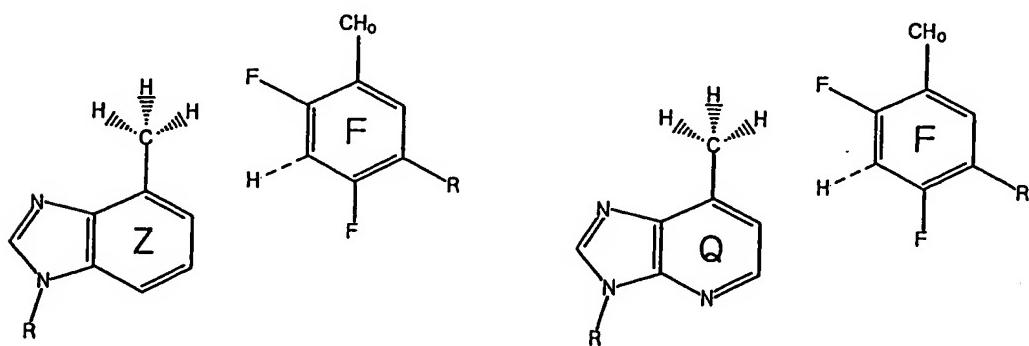
a)



b)



c)



d)

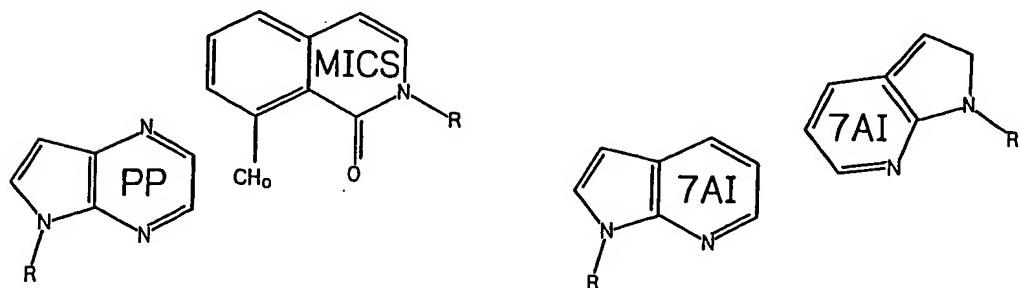
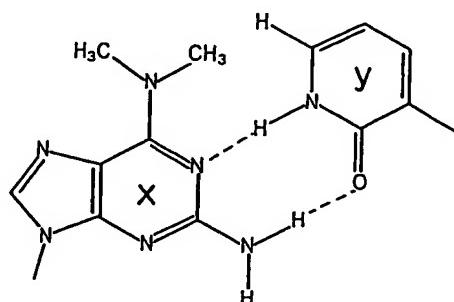
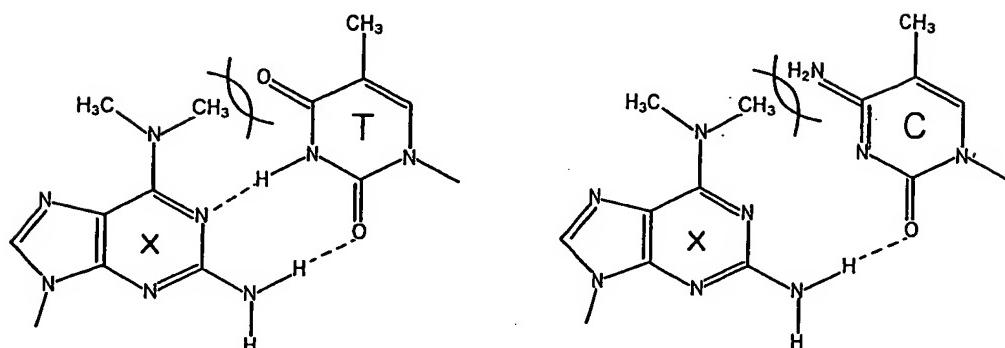


Figure 2

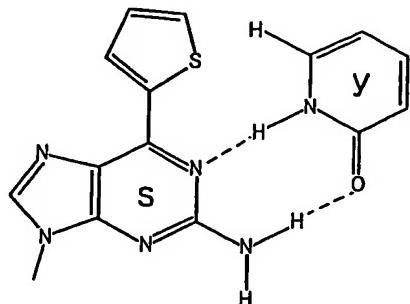
a)



b)



c)



d)

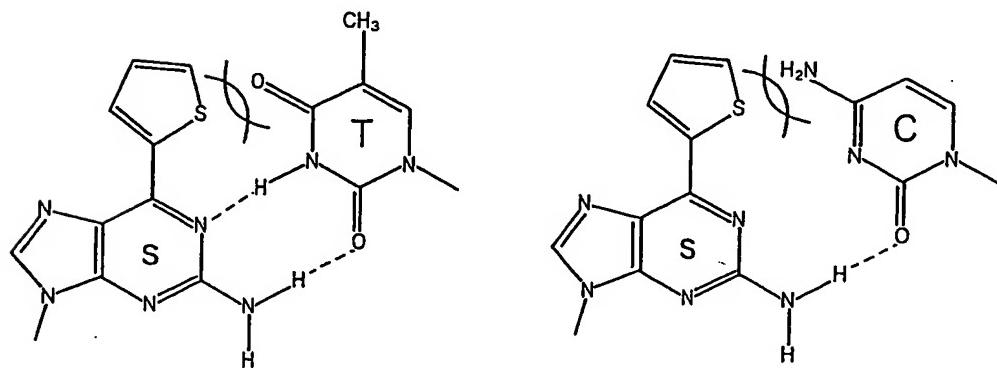
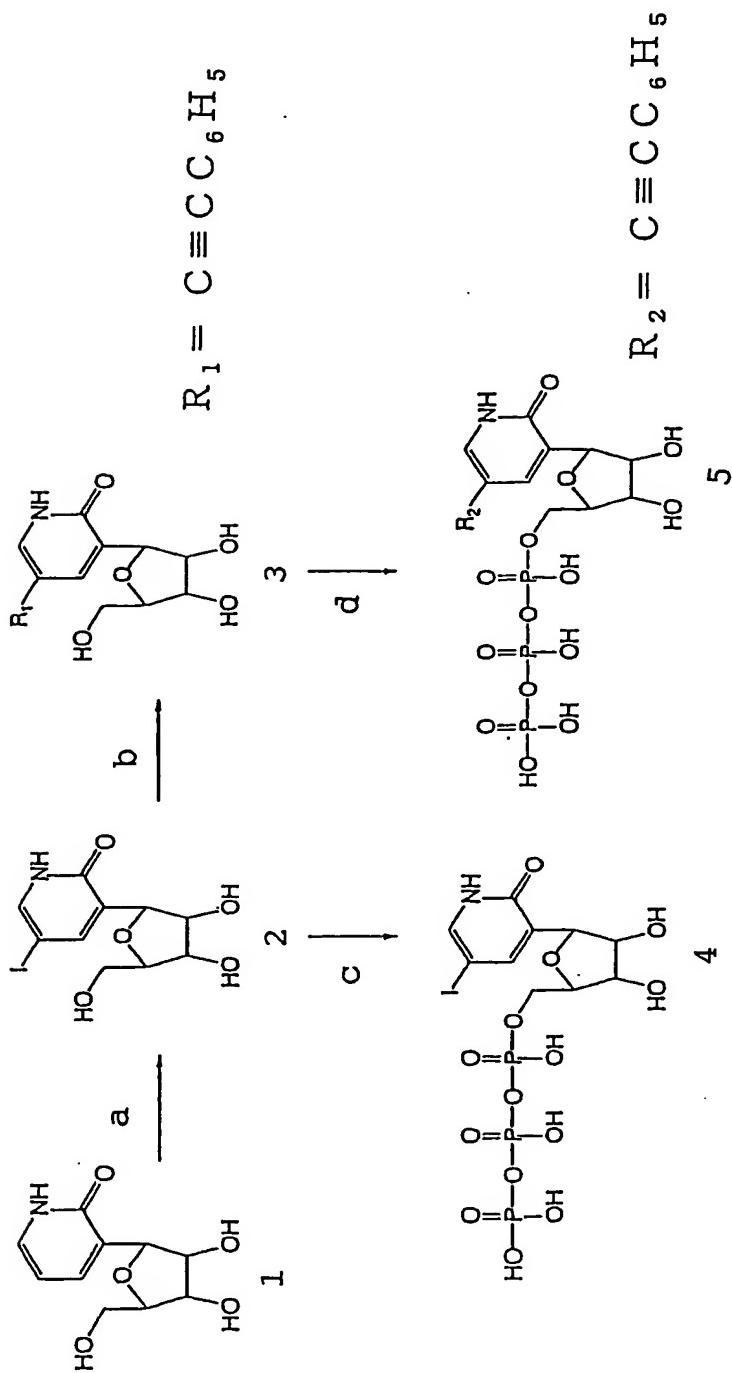


Figure 3



(a) I<sub>2</sub>, KI, Na<sub>2</sub>CO<sub>3</sub>, 100°C, 4h. (b) CF<sub>3</sub>CONHCH<sub>2</sub>CCH, Pd(PPh<sub>3</sub>)<sub>4</sub>, CuI, Et<sub>3</sub>N, DMF, rt, 4-6h.  
 (c) (1) POCl<sub>3</sub>, (CH<sub>3</sub>O)<sub>3</sub>PO, 0°C, 2h. (2) (n-Bu<sub>3</sub>NH)<sub>2</sub>PO, 0°C, 10min. (d) (1) POCl<sub>3</sub>, 1, 8-bis(dimethylamino)naphthalene, (CH<sub>3</sub>O)<sub>3</sub>PO, 0°C, 2h. (2) (n-Bu<sub>3</sub>NH)<sub>2</sub>PO, 0°C, 10min.  
 (3) conc. NH<sub>4</sub>OH, rt, 10h.

A

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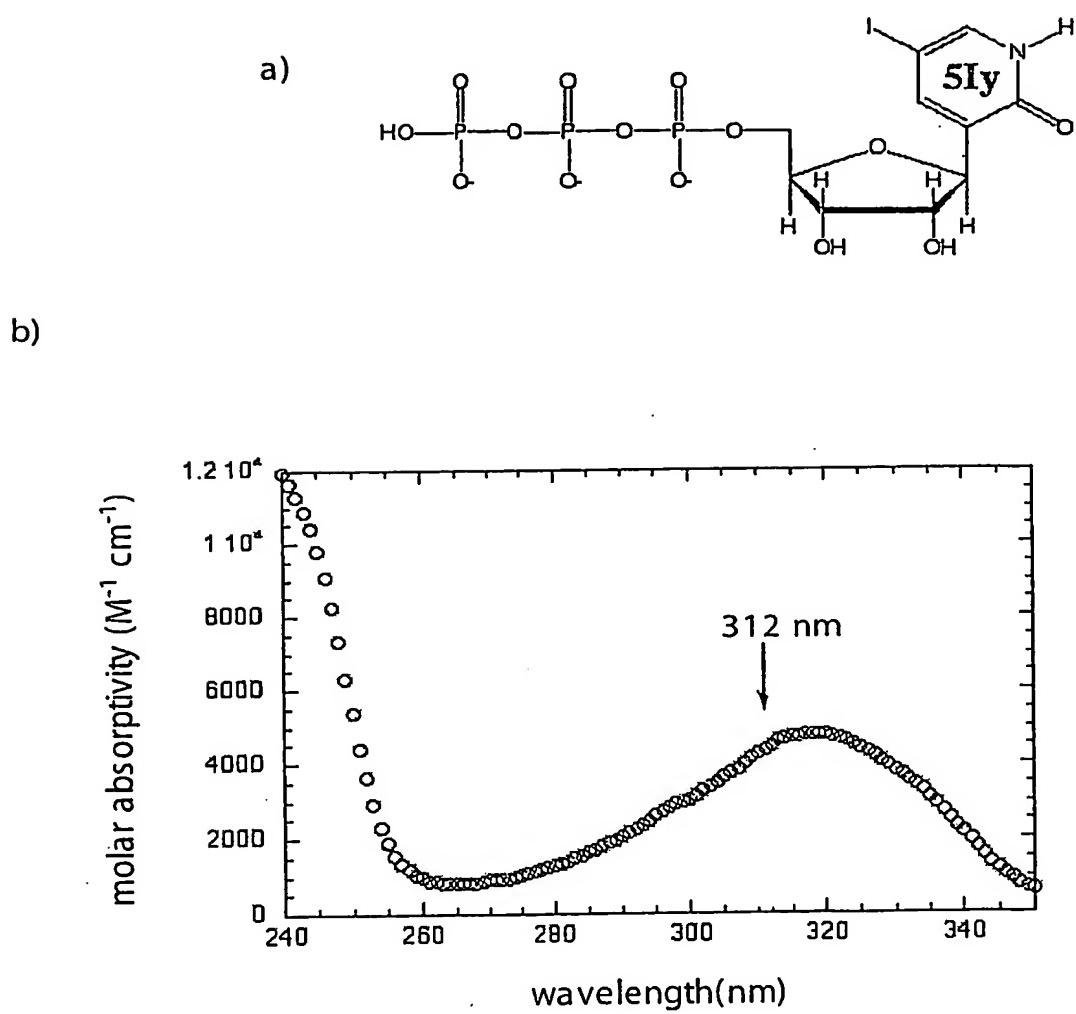
Docket No.: 0230-0222PUS1

Inventor: Ichiro HIRAO et al.

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Figure 4



## Figure 5

a)

5'-end primer; 39-mer

39.45 : 5' -GGTAATACTGACTCACTATAGGGAGTGGAGGAATTCATCG

3'-end primer; 29-mer

29.45 : 5' -GCAGAAGCTTGCTGTC~~T~~TAAGGCATATG

29.45s84 : 5' -GCAGAAGCTTGCTGTCsCTAAGGCATATG

29.45s87 : 5' -GCAGAAGCTTGCTsTCGCTAAGGCATATG

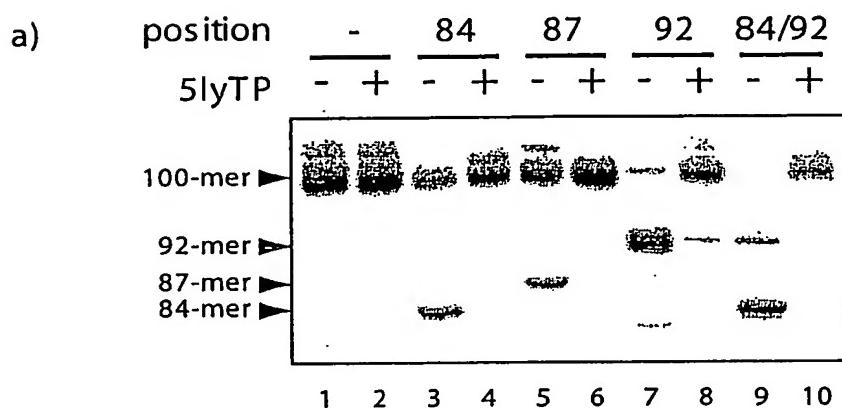
29. 45s92 : 5' -GCAGAAGCsTGCTGTC~~T~~TAAGGCATATG

29.45s84/92 : 5' -GCAGAAGCsTGCTGTCsCTAAGGCATATG

b)

5' - GGGAGUGGGAG GAAUUCAUCG AGGCAUAUGU CGACUCUCGUC UUCCUUCAAA  
CCAGUUUAUA AUUGGUUUUA GCAUAUGCCU UAGCGACAGC AAGCUUUCUGC

Figure 6



b)

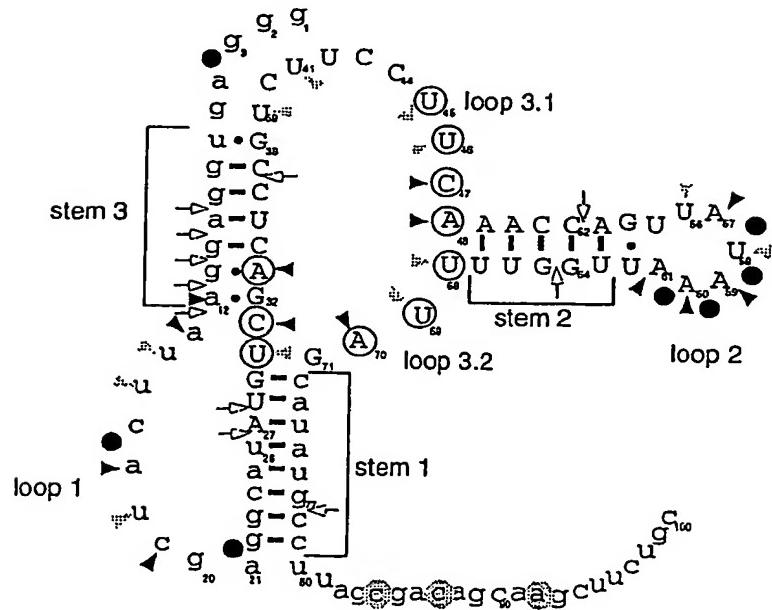


Figure 7

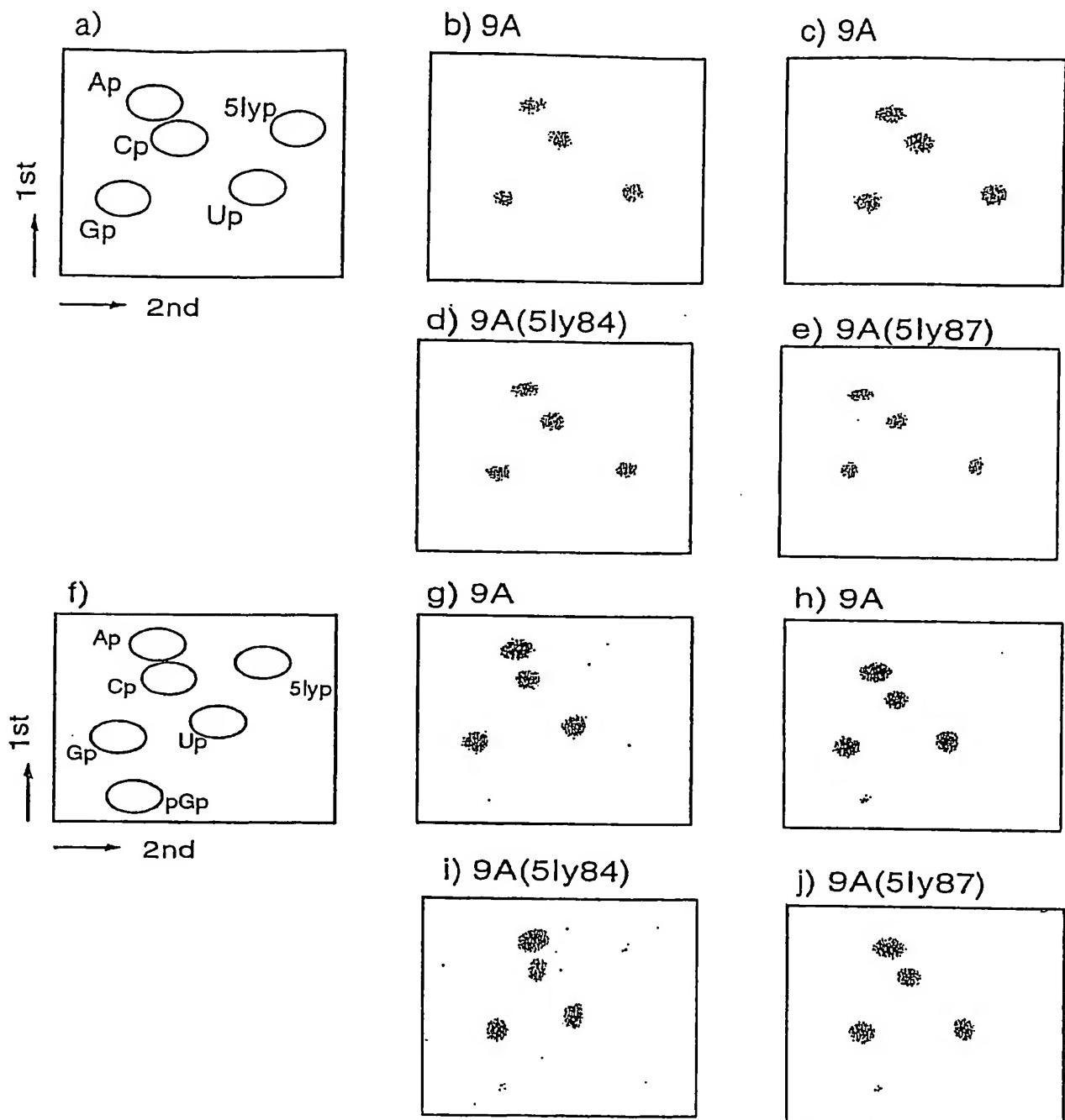


Figure 8

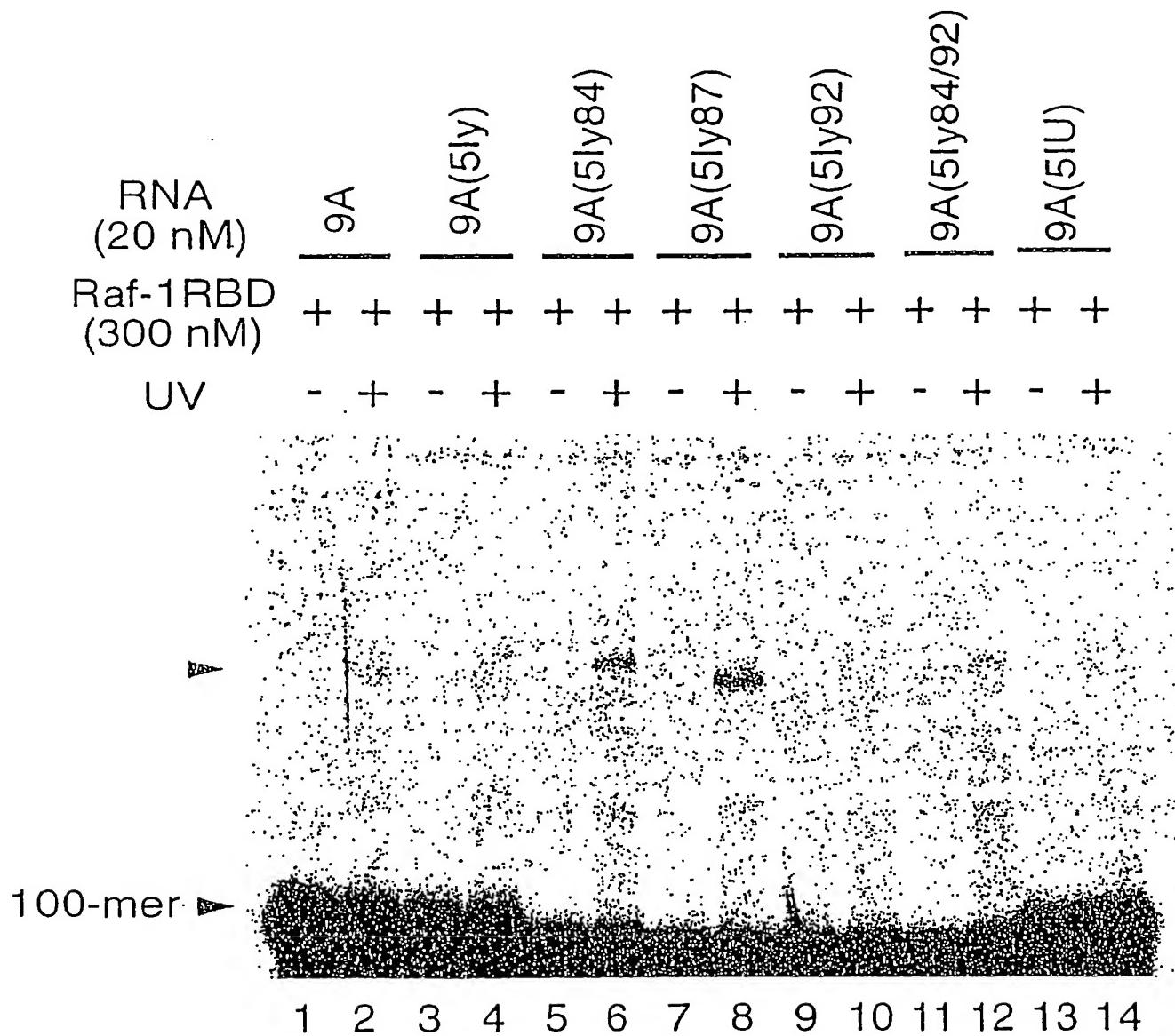


Figure 9

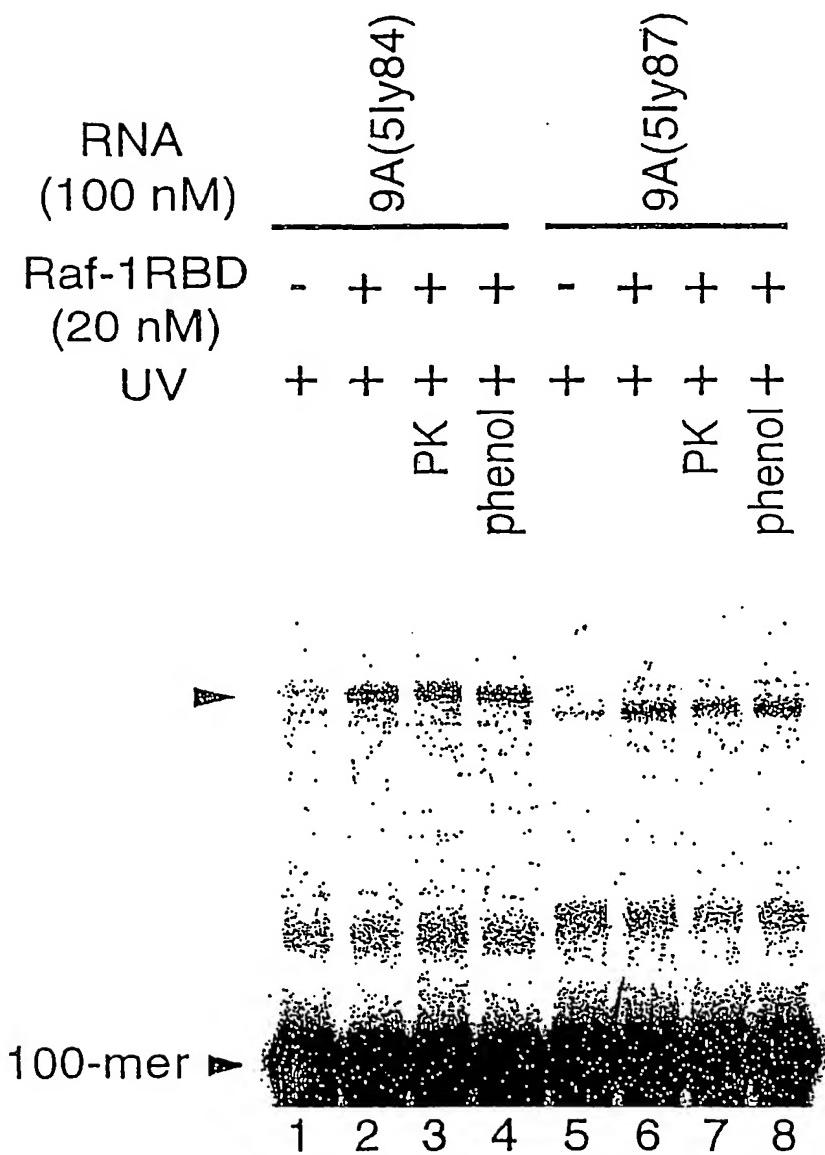
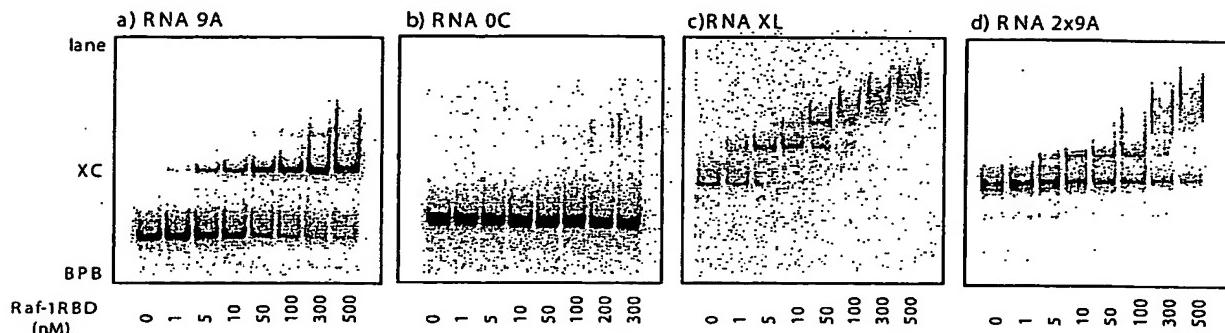
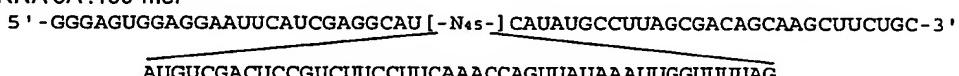


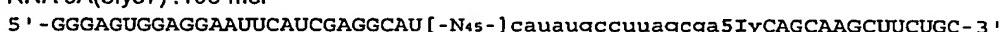
Figure 10



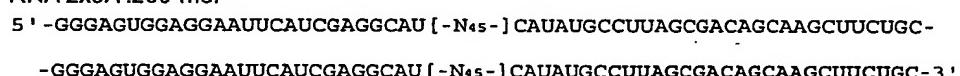
e) RNA 9A :100-mer



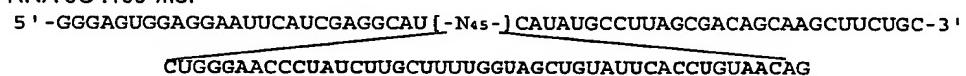
RNA 9A(5ly87) :100-mer



RNA 2x9A :200-mer



RNA 0C :100-mer



RNA XL : cross-linking product generated from two molecules of 9A(5ly87)

Figure 11

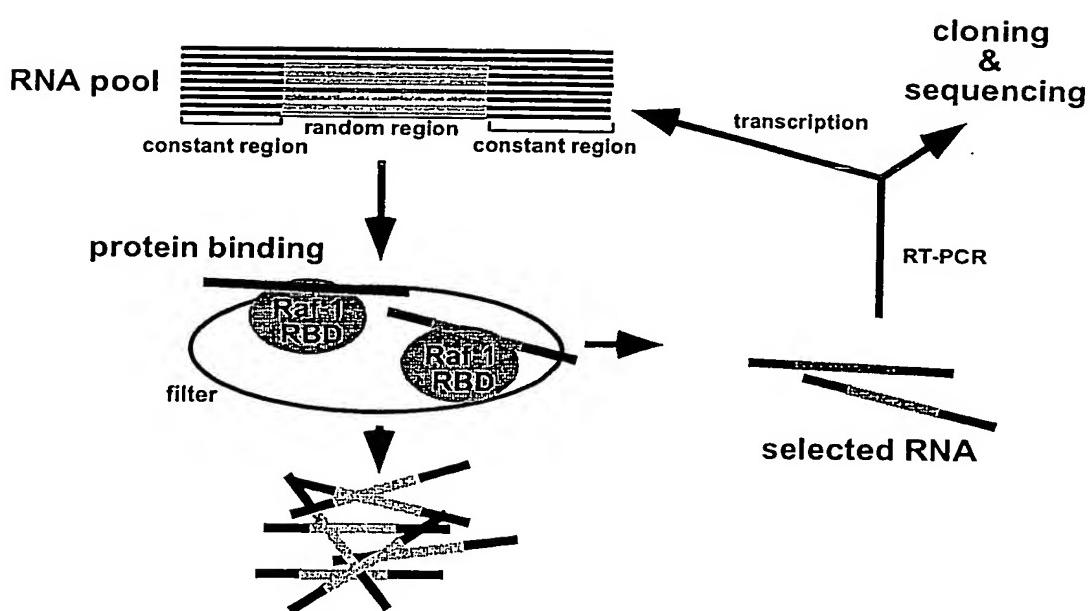


Figure 12

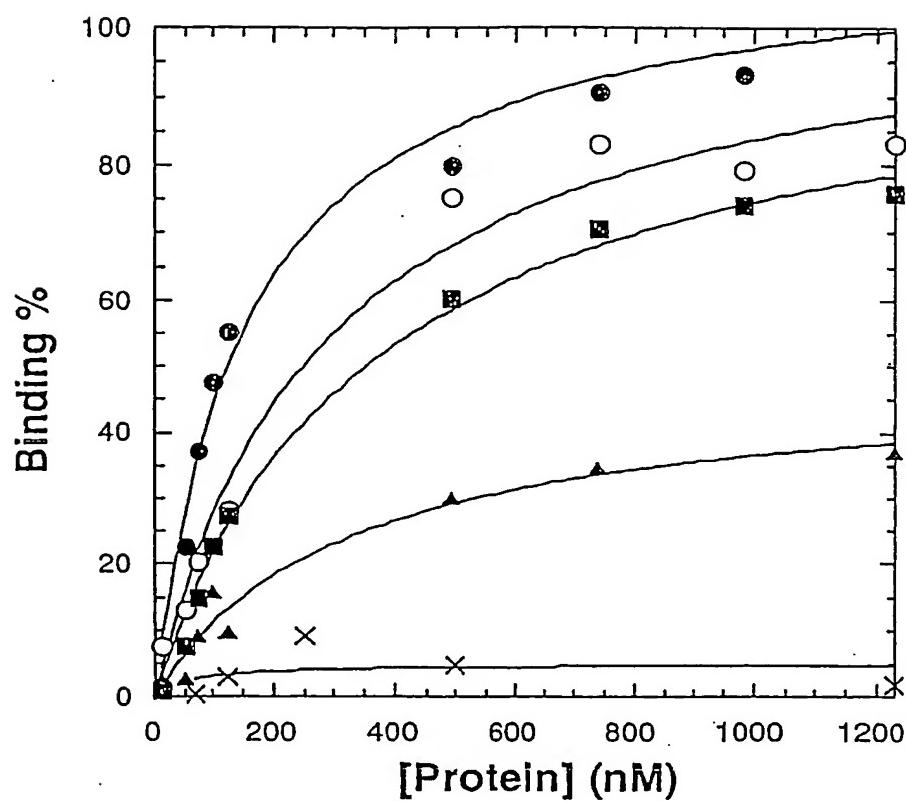
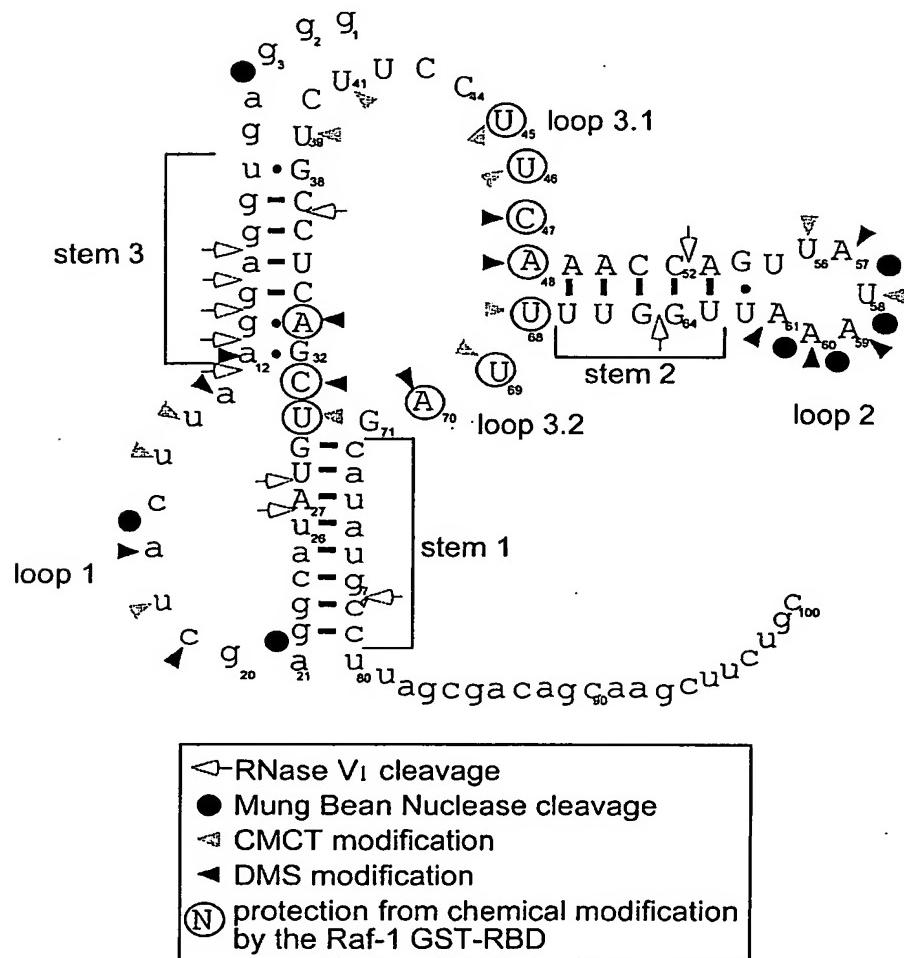


Figure 13

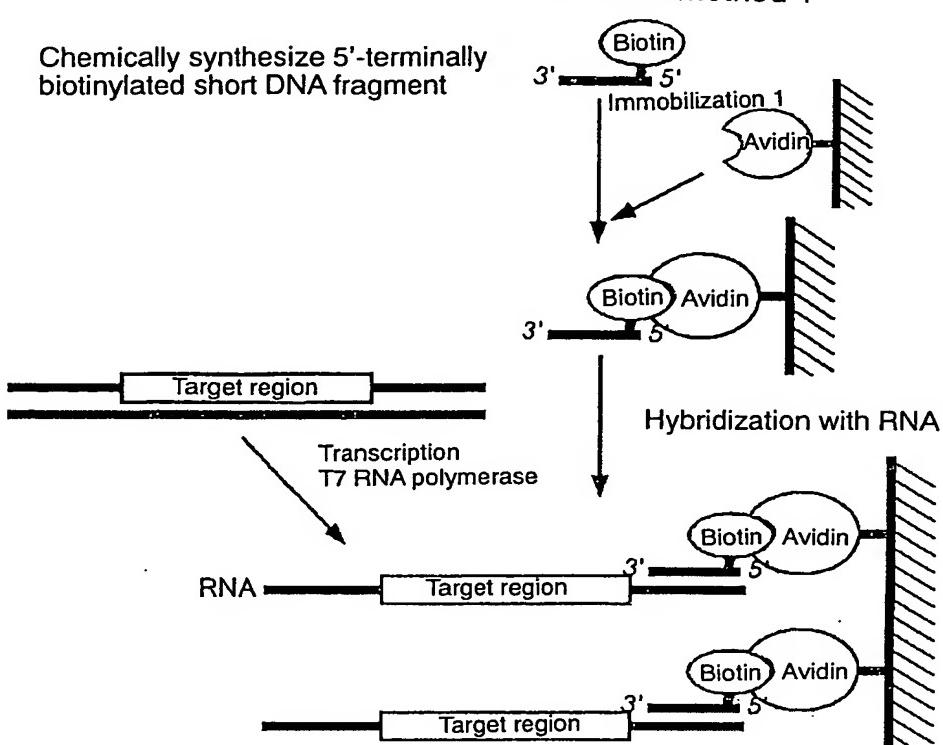


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Figure 14

Conventional Method 1



Conventional Method 2

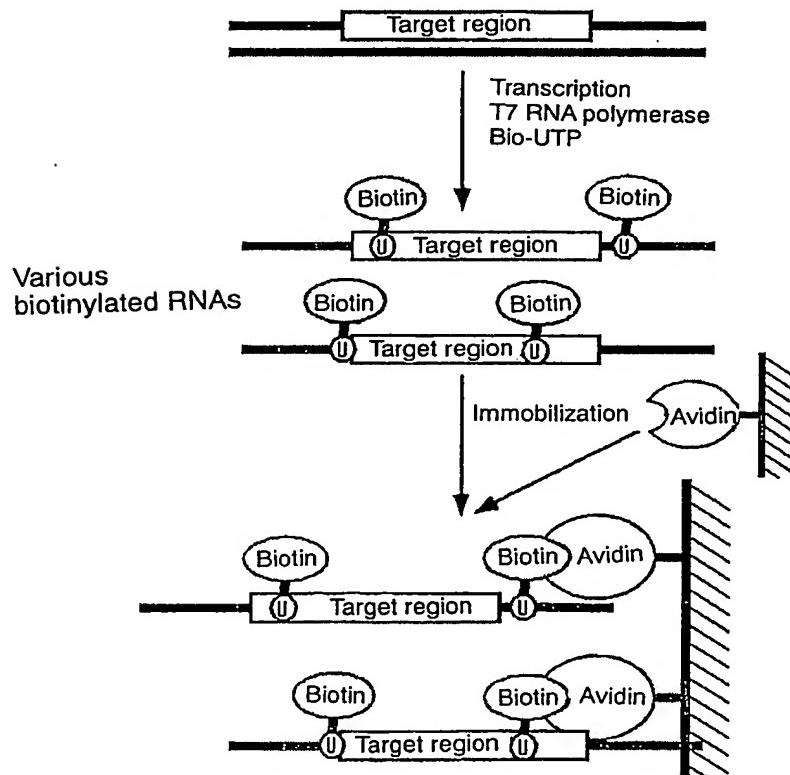
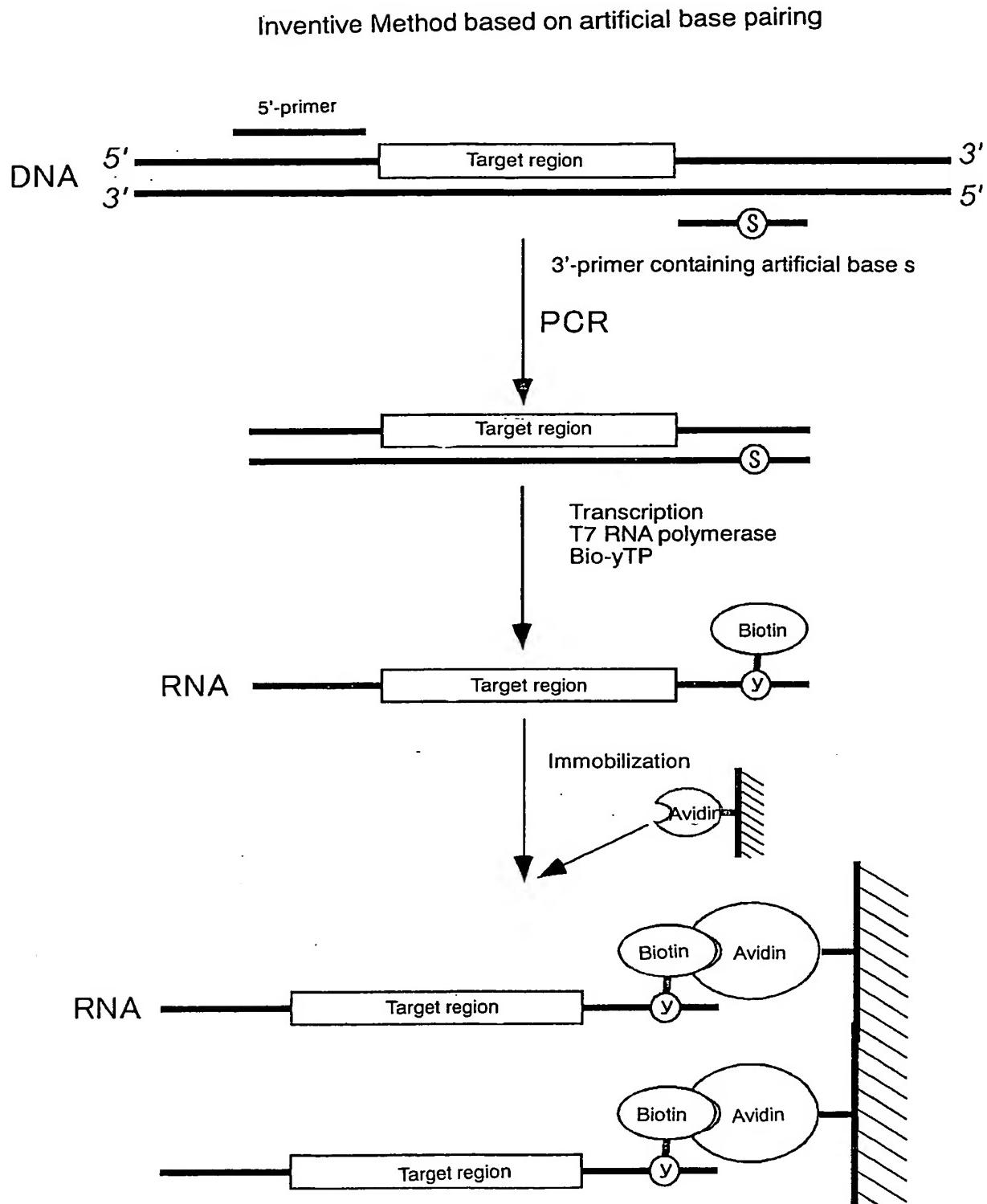


Figure 14 (Continued)



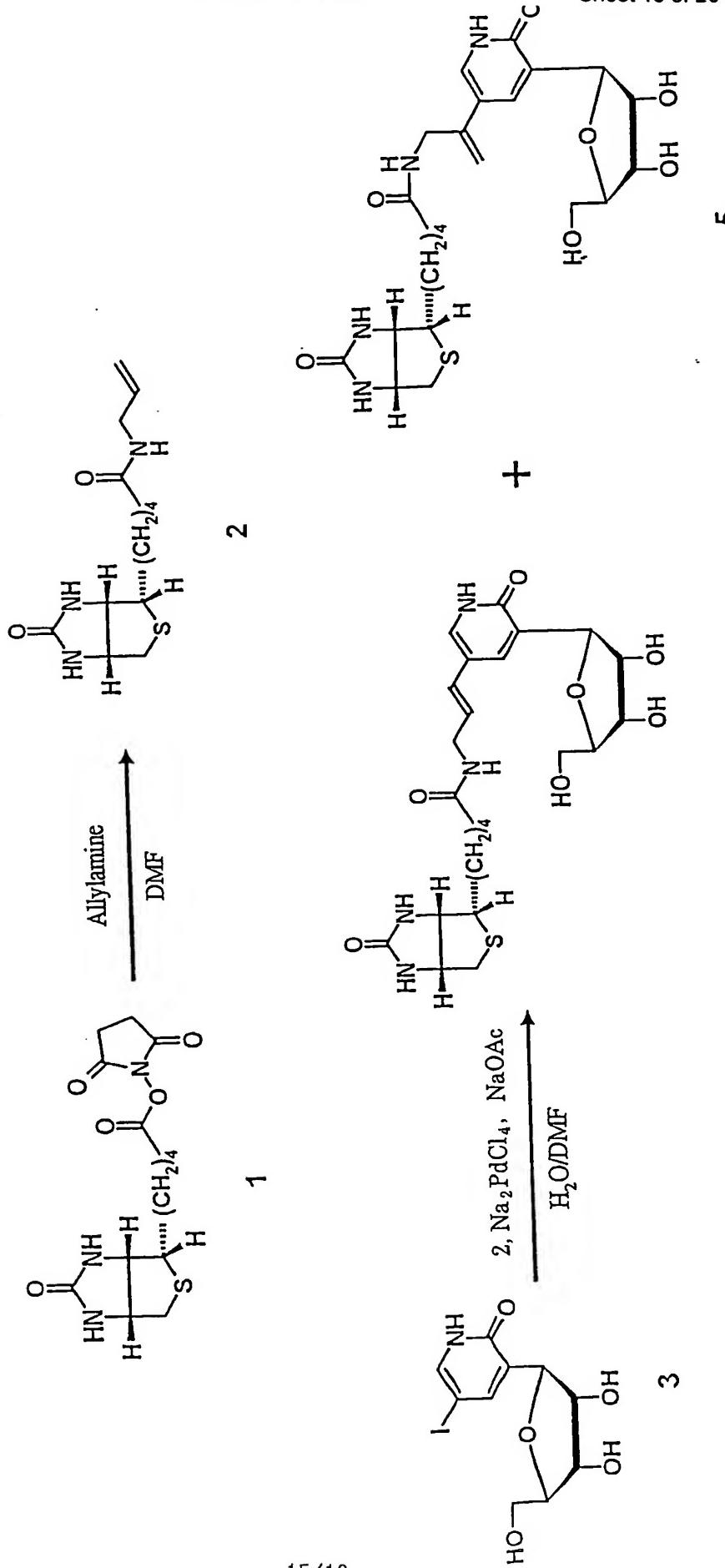
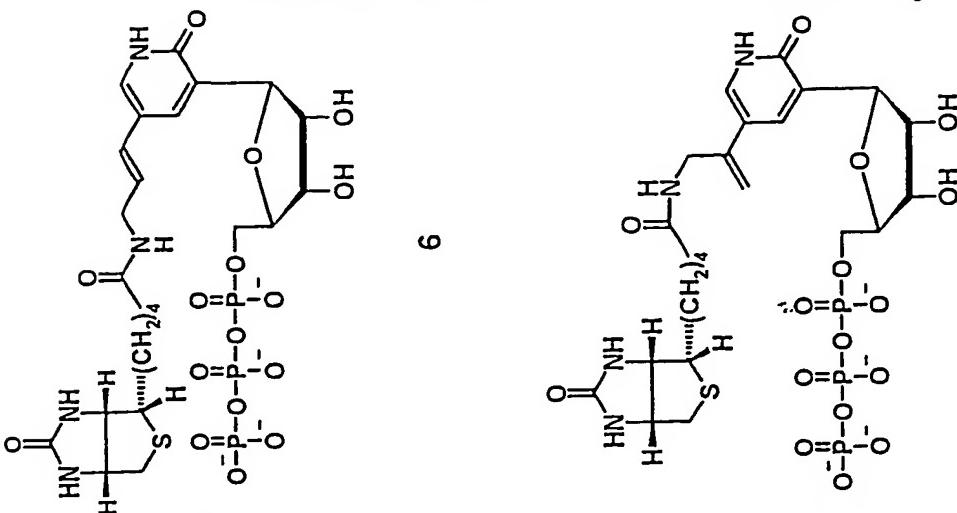
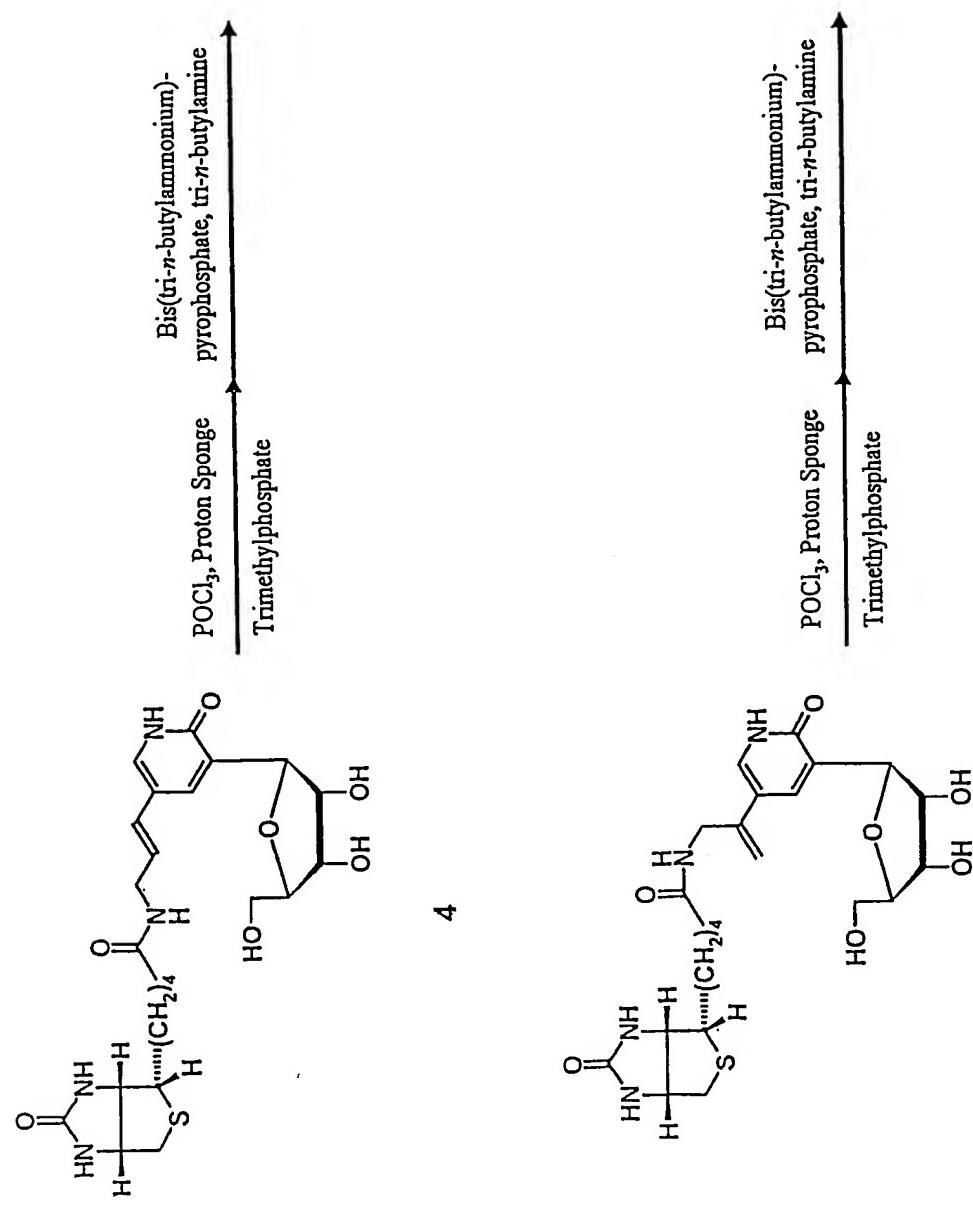


Figure 15



6

7



5

4

Figure 16

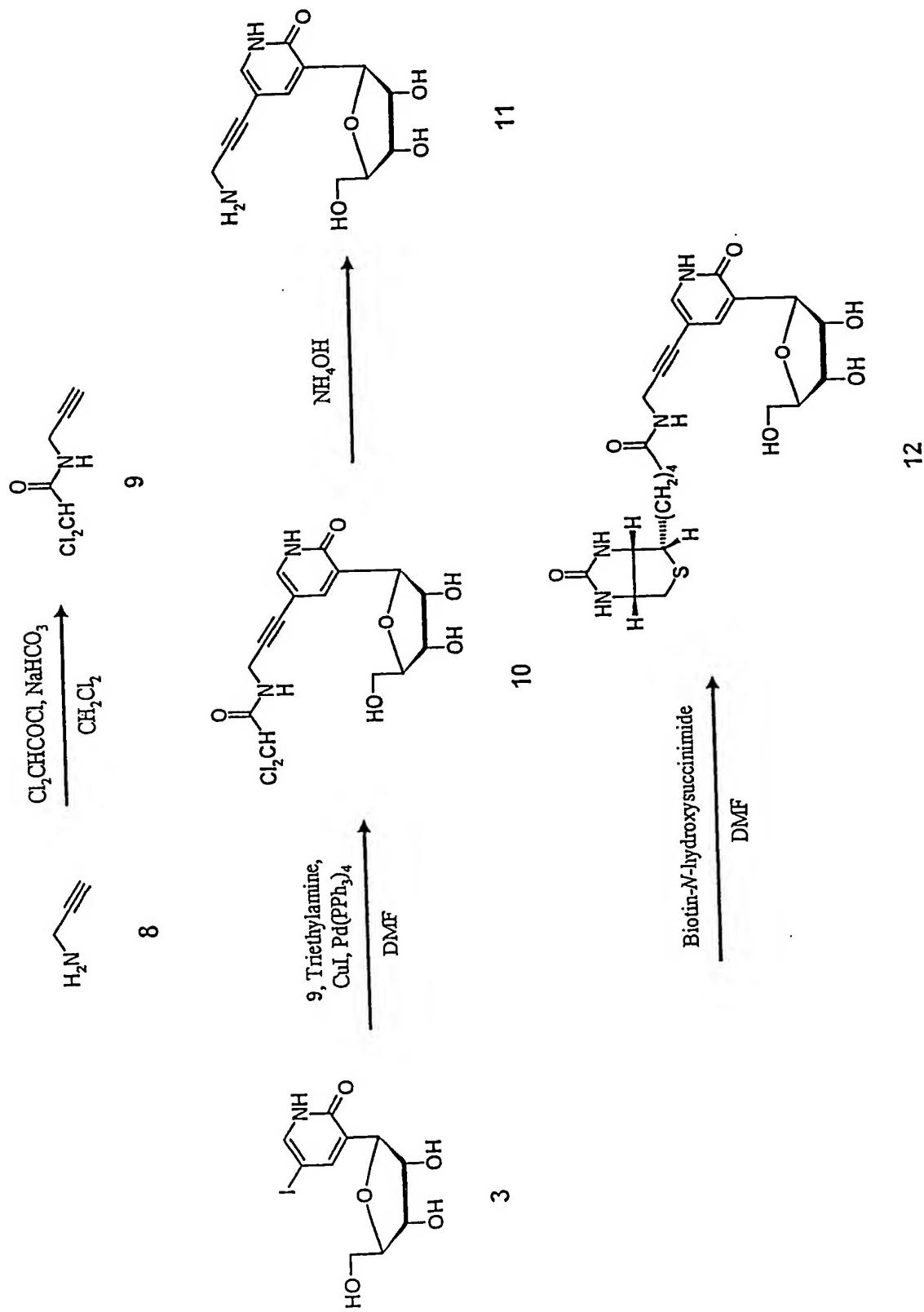


Figure 17

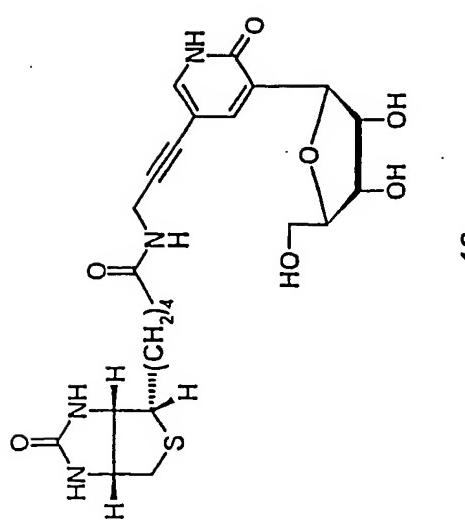
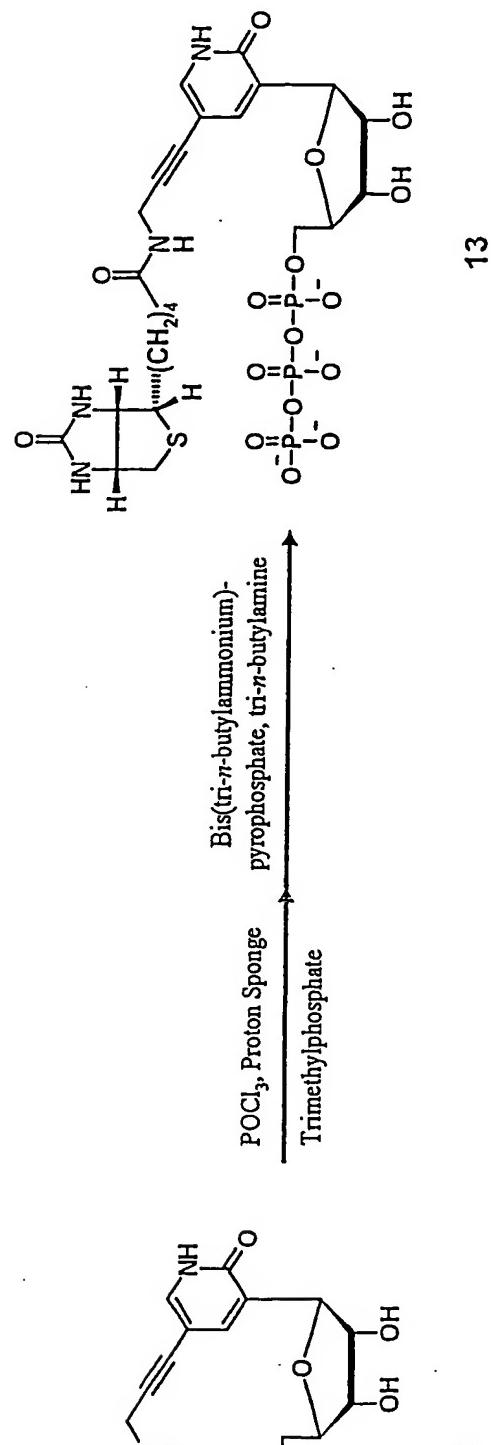


Figure 18

non-template strand (T7 prim28N): 5' -d (ATAATCCGACTCTACTATAGGGAGGAAGA)  
 template strand (temp35s or temp35A): 3' -d (TATTATGCTGAGTGTGATATCCCTCCTCTCTCGT) N = s or A  
 $+^1_1 +^1_1 +^1_1 +^1_1 +^1_1 +^1_1$

T7 RNA polymerase  
 ↓  
 1 mM N'TPs, [ $\alpha$ -<sup>32</sup>P]ATP, 10 mM GMP

in the absence of CTP: 15-mer RNA r (GGGAGGAAGAN' AGAG)  
 in the presence of CTP: 17-mer RNA r (GGGAGGAAGAN' AGAGCA)

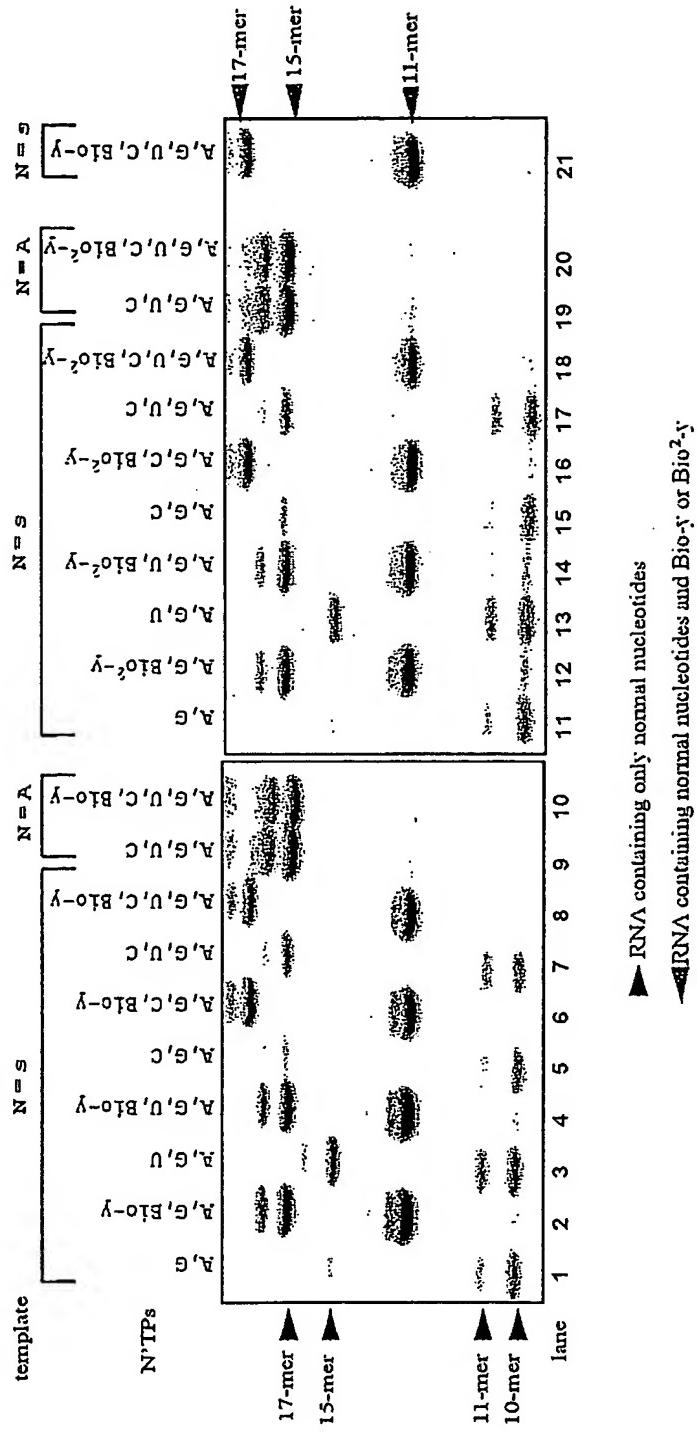


Figure 19